

REMARKS

In an Office Action mailed on December 29, 2004, claims 1-6, 9-14, 17-23, 25-29, 31-33, 36, 37, 39, 41 and 42 were rejected under 35 U.S.C. § 102(b) as being anticipated by Ohnishi; and claims 7, 8, 15, 16, 24, 30, 34, 35, 38 and 40 were objected to as being dependent upon rejected base claims but were indicated as being allowable if rewritten in independent form. The § 102 rejections are addressed below.

Independent claims 1, 9, 17 and 25 have been amended to recite that the modulated signal has substantially more spectral energy near the harmonic than near the fundamental frequency.

Ohnishi describes a modulator, such as the modulator in Fig. 2, that includes a mapping circuit 21 and a complex buffer 22. The Examiner labels the mapping circuit 81 in Fig. 8 as the alleged modulator. This is equivalent to the mapping circuit 21 depicted in Fig. 2. As described in Ohnishi, the mapping circuit 29 samples the I and Q signals at the output carrier frequency. Ohnishi, 4:10-12.

Fig. 3A of Ohnishi depicts the result of this sampling, and as can be seen from this figure, the input signal appears at multiples of the carrier frequency. As depicted in Fig. 3A, the spectral energy is equal across the spectrum. Ohnishi also discloses that the complex buffer 22 samples the output signal from the mapping circuit 21 at a frequency equal to three times the carrier frequency. Ohnishi, 4:20-21. The spectral energy present in the signal that is produced by the complex filter 22 is shown in Fig. 3B of Ohnishi. The frequency characteristic 310 at the f_s frequency (i.e., the harmonic frequency) is the same as the frequency characteristic 311 at the f_c carrier frequency. Ohnishi later describes in connection with Fig. 3C that the output of the complex coefficient bandpass filter 22 has a spectrum that is depicted in Fig. 3C. As depicted in Fig. 3C, a frequency characteristic 320 resides at the carrier frequency 320 as well as at a harmonic frequency.

It is noted that in none of the Figs. 3A, 3B and 3C does Ohnishi depict a modulated signal that has substantially more spectral energy near a harmonic than near the fundamental frequency. Instead, these figures depict the harmonic spectral energy as being the same as the fundamental frequency spectral energy. Therefore, for at least this reason, Ohnishi fails to anticipate claim 1, 9, 17 or 25.

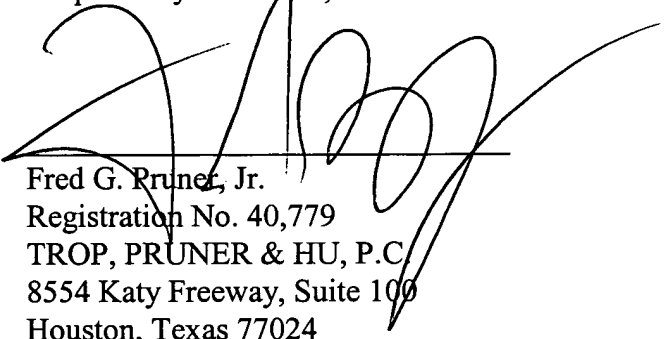
Claims 3-6, 11-14, 18-23, 27-29, 31-33, 36, 37, 39, 41 and 42 are patentable for at least the reason that these claims depend from allowable independent claims. Thus, for at least the reasons that are set forth above, withdrawal of the § 102(b) rejections in view of Ohnishi is requested.

CONCLUSION

In view of the foregoing, withdrawal of the § 102 rejections and a favorable action in the form of a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (ITL.0586US).

Respectfully submitted,

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